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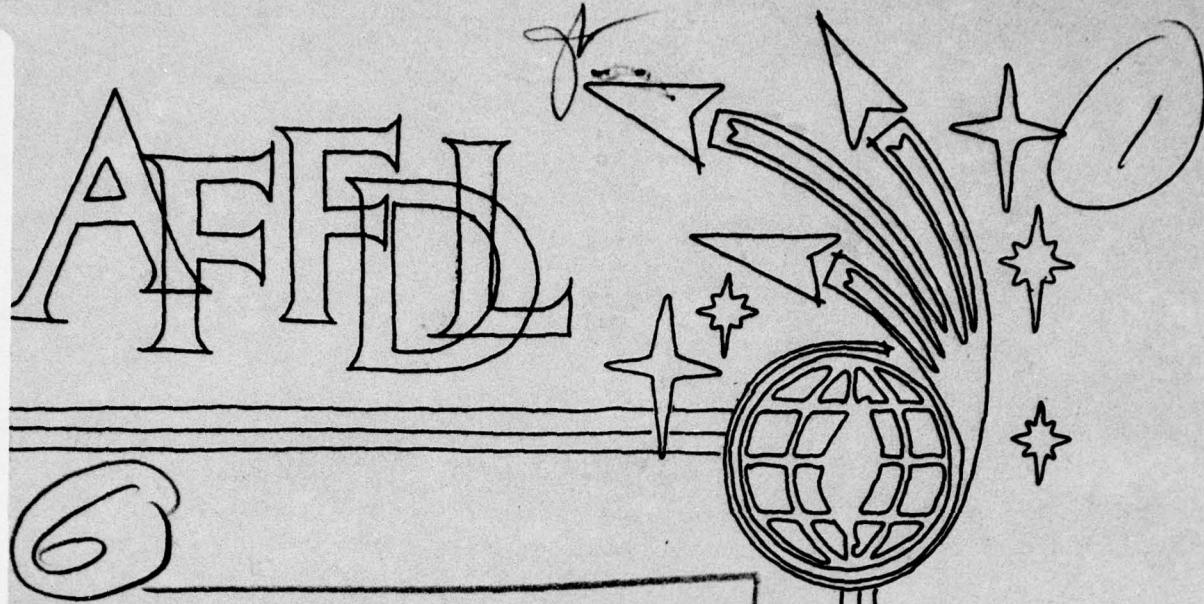
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AIR FORCE SYSTEMS COMMAND
AF FLIGHT DYNAMICS LABORATORY
WRIGHT-PATTERSON AFB, OHIO 45433

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AFFDL TR

73-66
21 May
W. Young

Integrated Pilot Assist System
P: 8226 Internal

U
B

73-139
18 Oct
J. Pruner

In-Flight Investigation of the B-1
Flight Control System P: 8219
F33615-73-C-3051

U
B

Control Systems Development Branch (FGL)

AFFDL TR

73-11 23 Jan T. Lewis	In-Flight Testing of a Flight Control System Multiplex System in the NC-131H Total In-Flight Simulator P: 8225 F33615-72-C-1183	U A
73-13 24 Jan R. Beavin	Semiconductor Neutron Detectors P: 8221 F33615-72-C-1756	U A
73-26 13 Feb F. Taylor	Design and Devel of a Lateral Axis Integrated Actuator Package for Tactical Fighter A/C P: 8225 F33615-71-C-1452	U B
73-32 7 Mar R. Guth	Flight Evaluation of Optimal Commands for F-106 Minimum Time Climb and Acceleration P: 8222 F33615-71-C-1017	U A
73-33 7 Mar P. Blatt	Compatibility of Maneuver Load Control and Relaxed Static Stability Applied to Military A/C P: 8226 F33615-71-C-1234	U A
73-43 10 Apr T. Lewis	Design, Devel, and FLT Test of Multiplexing Hardware for Use in a Fly-By-Wire-Flight Central Sys P: 8225 F33615-71-C-1147	U A
73-49 20 Apr J. Roberts	Turbine Inlet Gas Temperature Sensor for Engine Control P: 1987 F33615-71-C-1510	U A
73-80 28 Jun P. Maybeck	Wander Azimuth Implementation Algorithm for a Strapdown Inertial System P: 1987 Internal	U A

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73-85 13 Jul T. Lewis	Series of Devel and Test Tasks for FLT Control Design Techniques P: 8225 F33615-72-C-1508	U A
73-89 25 Jul J. Houtz	Angle-of-Attack Computation System P: 8222 F33615-71-C-1280	U A
73-101 Vol I 13 Aug H. Snowball	Aircraft Fuel Quantity Gaging System Application and System Technology Advancement P: 1987 F33615-71-C-1039	U A
73-101 Vol II 13 Aug H. Snowball	Aircraft Fuel Quantity Gaging System Application and System Technology Advancement P: 1987 F33615-71-C-1039	U A
73-101 Vol III 24 Jan H. Snowball	Aircraft Fuel Quantity Gaging System Application and System Technology Advancement P: 1987 F33615-71-C-1039	U A
73-107 27 Aug F. Smith	Supplemental Report on the Vibragimbal Multisensor Environmental Tests and Rapid Reaction P: 8222 F33615-70-C-1633	U A
73-119 Vol I 12 Sep K. Bassett	Digital Flight Control Systems for Tactical Fighters P: 1987 F33615-72-C-1058	U A
73-119 Vol II 12 Sep K. Bassett	Digital Flight Control System Design Considerations P: 1987 F33615-72-C-1058	U A
73-119 Vol II Sup 1 12 Sep K. Bassett	Digital Flight Control System Design Considerations P: 1987 F33615-72-C-1058	U A

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73-135 11 Oct A. Barfield	Terrain Following Criteria P: 1987 F33615-72-C-2062	U B
73-145 30 Oct J. Roberts	High Temperature Solid State Pressure Transducers for Military Jet Engine Environments	U A

FLIGHT MECHANICS DIVISION (FX)

Analysis Group (FX)

AFFDL TR

73-9 20 Jan T. Weeks	Similarity Parameters And Their Sensitivity For Transonic Airframe Exhaust Nozzle Interactions P: 1476 F33615-72-C-1362	U A
73-86 13 Jul J. Van Kuren	Method of Direct Calculation of Compressible Turbulent Skin Friction and Heat Transfer in Three Dimensional Boundary Layer Flow P: 1366 F33615-72-C-1509	U A
73-106 5 Sep J. Bosison	Investigation of Test Facility Environmental Factors Affecting Boundary Layer Transition P: 1366 Internal	U A
73-121 14 Sep W. Calarese	Computational Analysis of Unsteady Circumferential and Radial Distortion in Subsonic Diffusers P: 1476 F33615-72-C-1089	U A

Thermomechanics Branch (FXE)

AFFDL TR

73-102 16 Aug E. Brown Ewards	Fluctuation in Heat Flux As Observed in the Expanded Flow From the Rent Facility ARC Heater P: 1988 Internal	U A
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73-28 13 Feb N. Slinki	Geometric and Attitude Effects of Boundary Layer Transition P: 1366 F33615-72-C-1628	U B
73-30 2 Mar J. Flaherty	Semi-Empirical Technique for Predicting Laminar Flow Separation Due to Jet Pluming P: 1366 Internal	U B
73-58 14 May N. Slinki	An Analytical and Experimental Investi- gation of Hypersonic Viscous Interaction Pressure Effects P: 1366 Internal	U A
73-75 12 Jun J. Patterson	Determination of Interference Heating Effects on the Haste Missile Using the Thermographic Phosphor Technique P: 479A Internal	U B
73-96 10 Aug V. Dahlem	The Effect of Boundary Layer Growth on the Stability of Supersonic Boundary Layers P: 1366 F33615-70-C-1019	U A
73-113 31 Aug V. Dahlem	Improved Methods for Solving the Small Disturbance Equations P: 1366 F33615-70-C-1019	U A
73-154 27 Nov R. Nash	Analytical and Experimental Investigation of Optimum Fighter A/C Maneuvers P: 1366 Internal	U B
73-159 Vol I 11 Dec V. Bland	The Mark IV Supersonic Hypersonic Arbitrary Body Prog. Vol I - Users Manual P: 1366 F33615-72-C-1675	U A
73-159 Vol II 11 Dec V. Bland	Program Formulation P: 1366 F33615-72-C-1675	U A

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73-159 Vol III
11 Dec
V. Bland

Program Listing P: 1366 F33615-72-C-1675 U
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Aeromechanics Branch (FXM)

AFFDL TR

73-68 Vol I
24 May
D. Sedlock

Subsonic Diffuser Designs for Interceptor Applications P: 1476 F33615-72-C-1111 U
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73-68 Vol II
24 May
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Subsonic Diffuser Designs for Interceptor Applications P: 1476 F33615-72-C-1111 U
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73-71 Vol I
30 May
P. Everling

Integrated Airframe-Nozzle Performance For Designing Twin-Engine Fighters P: 668A F33615-72-C-1748 U
B

73-71 Vol II
30 May
P. Everling

Wind Tunnel Data Identification and Presentation P: 668A F33615-72-C-1748 U
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73-71 Vol III
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Operating Manual for Nozzle Internal Method of Characteristics Computer Deck P: 668A F33615-72-C-1748 U
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73-71 Vol IV
30 May
P. Everling

Operating Manual for Subsonic Axisymmetric Nozzle Boattail Drag Computer Deck P: 668A F33615-72-C-1748 U
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73-71 Vol V
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73-71 Vol VI
30 May
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Revised Operating Manual for Twin Nozzle/ Afterbody Drag and Nozzle Internal Performance Computer Deck P: 668A F33615-72-C-1748 U
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73-72 5 Jun L. Surber	Advanced Inlet Study (Tailor-Mate II) P: 668A F33615-72-C-1747	U B
73-97 10 Aug L. Rogers	Transonic Performance of Jet Flaps On An Advanced Fighter Configuration P: 1366 F33615-71-C-1434	U B
73-124 20 Sep Capt. Sotomayer	Lifting Weapons Aerodynamics P: 7500 Internal	U
73-132 3 Oct R. Clark	Ejector Blown Lift/Cruise Flap Wing Tunnel Invest P: 1476 Internal	U A
73-138 16 Oct R. Osborn	An Investigation of the Trailing Vorticity Behind a STOL Aircraft P: 1476 F33615-72-C-1072	U A
73-144 Vol I 29 Oct J. Johnson	Development of Empirically Based Computer Program To Predict Aero Characteristics of Large Aircraft Vol I - Empirical Methods P: 1476 F33615-73-C-3043	U A
73-144 Vol II 1 Nov J. Johnson	Program User Guide P: 1476 F33615-73-C-3043	U A
73-153 27 Nov C. Jobe	Drag Measurement of Upswept After Body and Analytical Study on Axisymmetric Separation P: 1476 F33615-73-C-3037	U A

Experimental Engineering Branch (FXN)

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73-10 23 Jan H. Lee	Electron Beam Analyses of the Properties of Molecular and Atomic Oxygen in the AFFDL 2-Foot Electrogasdynamics Facility P: 1426 F33615-70-C-1761	U A
73-25 12 Feb S. Lazdinis	Computer Program For Vibrational Nonequilibrium Effects in Expanding High Enthalpy Reacting Air Flows P: 1426 Internal	U A

Aerospace Vehicle Branch (FXS)

AFFDL TR

73-104 Vol I 17 Aug R. DeCamp	Incremental Growth Vehicle Vol I - Summary P: 1431 F33615-73-C-3069	U B
73-104 Vol II 17 Aug R. DeCamp	Analysis and Design P: 1431 F33615-73-C-3069	U B
73-116 7 Sep	X-24B Growth Version Feasibility Study P: 1431 F33615-73-C-3129	U B

VEHICLE DYNAMICS DIVISION (FY)

Aero-Acoustics Branch (FYA)

AFFDL TR

73-8 16 Jan N. Wolf	Sonic Fatigue Test Methods at Elevated Temperatures P: 4437 F33615-71-C-1217	U A
73-56 11 May O. Maurer	Effects of Structural Heating on the Sonic Fatigue of Aerospace Vehicle Structures P: 4437 F33615-72-C-1198	U B
73-155 Pt I 29 Nov D. Smith	Acoustic Fatigue of Aircraft Structures at Elevated Temperatures P: 1471 F33615-72-C-1141	U B
73-155 Pt II 29 Nov D. Smith	Acoustic Fatigue of Aircraft Structures at Elevated Temperatures P: 1471 F33615-72-C-1141	U B
73-158 7 Dec D. Smith	Jet Noise Reduction for Mil Reconnaissance/Surveillance Aircraft, Phase II - Analysis and Design of a Quiet Test Vehicle P: 1471 F33615-71-C-1840	U B

Aerospace Dynamics Branch (FYS)

AFFDL TR

73-45 16 Apr S. Pollock	Aerodynamic Loads on Advanced Fighter Aircraft P: 1370 F33615-72-C-2080	U B
73-74 Vol I 11 Jul S. Pollock	A Rapid Method for Flutter Clearance of Aircraft with External Stores Vol I - Theory and Application P: 1370 F33615-71-C-1611	U B

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73-74 Vol II 11 Jun S. Pollock	User's Manuals for Facts Computer Program P: 1370 F33615-71-C-1611	U B
73-74 Vol III 11 Jun S. Pollock	Programmer's Manual for Faces Computer Program P: 1370 F33615-71-C-1611	U B
73-91 Pt I 26 Jul R. Andries	Large Scale Flutter Optimization of Lifting Surfaces Pt I - Analytical Investigation P: 1370 F33615-72-C-1275	U B
73-91 Pt II 26 Jul R. Andries	Program Documentation P: 1370 F33615-72-C-1275	U B
73-109 28 Aug D. Sheets	Analysis for the Determination of Significant Characteristics of Runway Roughness P: 1370 F33615-72-C-1346	U B
73-111 Vol I 1 Nov M. Shirk	Test Specimen Program P: 1370 F33615-70-C-1837	U B
73-111 Vol II 30 Aug M. Shirk	Dynamic Characteristics of Advance Filamentary Composite Structures Vol II - Aeroelastic Synthesis Procedure Development P: 1370 F33615-70-C-1837	U B
73-147 5 Nov L. Huttsell	Application of Three Unsteady Aerodynamic Load Prediction Methods P: 1370 Internal	U A

Dynamics Technology Applications Branch (FYT)

AFFDL TR

73-62 16 May D. Seely	Development of a 1093°C (2000°F) Prototype Microphone Transducer P: 1472 F33615-72-C-1199	U B
73-160 11 Dec V. McIntosh P. Bolds	Vibration and Acoustic Environment of UH-1 C Helicopter Configured With And Using M-5 and XM-21 Armament P: 1472 Internal	U B

PROTOTYPE DIVISION (PT)

Tactical Airlift Tech (TAT) ADPO (PTA)

AFFDL TR

73-19 Vol I 1 Feb G. Oates	STOL Tactical A/C Invest. Vol I - Configuration Definition: Medium STOL Transport With Vectored Thrust Mechanical Flaps P: 643A F33615-71-C-1757	U A
73-19 Vol I Suppl I 1 Feb G. Oates	Externally Blown Flap Supl - Aerodynamic Trades of Flap and Roll Control System P: 643A F33615-71-C-1760	U A
73-19 Vol II Pt I 2 Feb G. Oates	STOL Tactical A/C Invest Vol II - Pt I Aerodynamic Tech: Design Compendium, Vectored Thrust-Mechanical Flaps P: 643A F33615-71-C-1757	U A
73-19 Vol II Pt II G. Oates	A Lifting Line Analysis Method for Jet-Flapped Wings P: 643A F33615-71-C-1757	U A
73-19 Vol III 1 Feb G. Oates	STOL Tactical A/C Invest. Vol III - Takeoff and Landing Performance Ground Rules for Powered Lift STOL Transport A/C P: 643A F33615-71-C-1757	U A
73-19 Vol IV 1 Feb G. Oates	Analysis of Wind Tunnel Data, Vectored Thrust/Mech Flaps and Int Blown Jet Flaps P: 643A F33615-71-C-1757	U A
73-19 Vol V Pt I 1 Feb G. Oates	STOL Tactical A/C Invest. Vol V Pt I - FLT Control Tech System Analysis and Trade Studies for Medium STOL Transports, etc. P: 643A F33615-71-C-1757	U A
73-19 Vol V Pt II 1 Feb G. Oates	FLT Control Tech: Piloted Simulation of Medium STOL Transport with Vectored Thrust/ Mech Flaps P: 643A F33615-71-C-1757	U A
73-19 Vol VI 1 Feb G. Oates	Air Cushion Landing System Study P: 643A F33615-71-C-1757	U A

73-20 Vol I 1 Feb G. Oates	STOL Tactical A/C Invest Externally Blown Flap Configuration Definition P: 643A F33615-71-C-1760	U A
73-20 Vol II 1 Feb G. Oates	Design Compendium P: 643A F33615-71-C-1760	U A
73-20 Vol III 1 Feb G. Oates	Performance Methods and Takeoff and Landing Rules P: 643A F33615-71-C-1760	U A
73-20 Vol IV 1 Feb G. Oates	Analysis of Wind Tunnel Data P: 643A F33615-71-C-1760	U A
73-20 Vol V Pt I 1 Feb G. Oates	Flight Control Tech Pt I - Control System Mechanization Trade Studies P: 643A F33615-71-C-1769	U A
73-20 Vol V Pt II 16 Feb G. Oates	Simulation Studies/FLT Control System Validation P: 643A F33615-71-C-1760	U A
73-20 Vol V Pt III 1 Feb G. Oates	Flight Control Tech Pt III - Stability and Control Derivative Accuracy Reg and Effects of Augmentation System Design P: 643A F33615-71-C-1760	U A
73-20 Vol VI 1 Feb G. Oates	Air Cushion Landing System Trade Study P: 643A F33615-71-C-1760	U A
73-21 Vol I 9 Mar G. Oates	STOL Tactical Aircraft Investigation Vol I - Configuration Definition P: 643A F33615-71-C-1754	U A
73-21 Vol II 9 Mar G. Oates	Design Compendium P: 643A F33615-71-C-1754	U A
73-21 Vol III Bk I 9 Mar G. Oates	Performance Ground Rules and Methods Pt I - Takeoff and Landing Ground Rules P: 643A F33615-71-C-1754	U A
73-21 Vol III Pt II 9 Mar G. Oates	Performance Ground Rules and Methods Pt II - Takeoff and Landing Digital Computer Program P: 643A F33615-71-C-1754	U A

73-21 Vol IV 9 Mar G. Oates	Wind Tunnel Data Analysis F33615-71-C-1754	P: 643A	U A
73-21 Vol V 9 Mar G. Oates	Flight Control Technology F33615-71-C-1754	P: 643A	U A
73-21 Vol VI 9 Mar G. Oates	Air Cushion and Ground Mobility Study P: 643A F33615-71-C-1754		U A

Advanced Concepts Branch (PTC)

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73-55 8 May R. Hirt	Adv Ejector Thrust Augmentation Study - Mass Entrainment of Axisymmetric and Rectangular Free Jets P: 7116 F33615-72-C-2045		U A
73-57 14 May D. Seger	Technology Integration for Close Air Support Aircraft P: 1207 F33615-73-C-3082		U B
73-112 Vol I 30 Aug S. Brown - D. Seger	Fighter Technology Demonstrator Precursor Analysis and Test P: 1207 F33615-73-C-3135		U A
73-112 Vol II 10 Sep D. Seger	An Exp. Invest of the Aerodynamic Character of a Fighter Tech Demo Jet Flap Devel Model at Low Subsonic Mock Number P: 1207 F33615-73-C-3135		U A
73-143 29 Oct Capt. Sandford	Composite Maneuver Augmentation for Fighter Aircraft Preliminary Design Study P: 1989 F33657-73-A-0056		U A
73-152 20 Nov N. Sternberger	Reliability/Maintainability Impact on System Support Costs P: 1207 F33615-73-C-3148		U B

Survivability / Vulnerability Branch (PTS)

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73-136 Vol I 11 Oct A. Holton	Effects of Internal Blast on Combat Aircraft Structure Vol I - Engineer's Manual P: 4363 F33615-72-C-1045	U B
73-136 Vol II 11 Oct A. Holton	User's Programmers Manual P: 4363 F33615-72-C-1045	U B

PLANS OFFICE (XP)

AFFDL TR

**73-41
3 Apr
M. Lipscomb**

Technical Objective Document for AFFDL

**U
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PART II

AFFDL Technical Papers

FBA

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1973 WESTEC Conference, Los Angeles, Ca. 12 Mar 73
N. Tupper

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Debonding of Rigid Inclusions in Plane Elastostatics
3rd ASTM Conference on Composite Materials; Testing and Design
Williamsburg, Va. 21-22 Mar 73 ASTM STP 546
G. Sendeckyj

On a Class of Interface Crack Problems
7th National Symposium on Fracture Mechanics, U of Maryland Aug 73
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Analysis of Cracks in Heterogeneous Solids
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Plenum Press, 1974, pp. 269-282
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Some Topics in Anisotropic Elasticity
Structural Design and Analysis Vol. in Treatise of Composite
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Application of Optimality Criteria Approaches to Automated Design
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V. Venkayya, N. Khot, L. Berke
AGARD Sym. on Structural Optimization, Milan Italy, 2-3 Apr 73

Fracture Mechanics in Aircraft Structural Design Application and
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3rd International Conference on Fracture
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D. Simpkins
R. Neulieb (/FBE)
J of Aircraft

Synthesis of Holography and Speckle Photography to Measure 3-D
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F. Adams G. Maddux
Applied Physics Letters

FBS

Structural Testing of Ceramic Nose Cap and Leading Edge Components
for a Reusable Enrgy Vehicle
E. Strauss (Martin Marietta)
F. Boensch (FBS)
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Preliminary Design of an Advanced Metallic Air Vehicle Wing
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J. Mullineaux
R. Egger (Boeing Co.)
Soicety of Experimental Stress Analysis

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Summary of the ACLS on the De Havilland CC-115

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K. Digges

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FEA

Development of an ACLS

AIAA 5th A/C Design, Flt. Test and Operations Mtg., St. Louis, Mo.

6-8 Aug 73

D. Perez

Maj. W. Benner

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SAFE Sym., Phoenix, Arizona, 7-11 Oct 73

F. Thompson, Jr.

A. Adduci (ASD/SML-2)

Environmental Test Methods

Inst. of Environmental Sciences, Anaheim, Ca. 1-5 Apr 73

D. Earls

Developing Realistic Temperature-Altitude-Humidity Environmental

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Naval Weapons Center, China, Lake, 5 Apr 73

Lt. P. Homol

Simulation of Captive Flight Aircraft Store Vibrations

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A. Burkhard

Technical Progress on New Vibration and Acoustic Tests for Proposed
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E. Roberts
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J. Peters

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Capt. R. Strahota
D. R. McGovern (McDonnell A/C Co.)

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R. Poyneer
C. Stockdale

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R. Johannes

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Dr. G. Kurylowich

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R. R. Smith
N. Sliski
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